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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,312	08/31/1999	Masanori Minamio	JEL-30763-PC	2451

7590 12/20/2001

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EXAMINER

CRUZ, LOURDES C

ART UNIT

PAPER NUMBER

2815

DATE MAILED: 12/20/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/380,312

Applicant(s)

MINAMIO ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11, 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figures 5 and 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the exposed faces of said outer lead portion arranged in a same level as an outer face of said sealing resin must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite "an upsetting" process. It is unclear to the examiner as to what exactly it is meant by such terminology.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.

Claims 1, 7 and 8 are rejected under 35 U.S.C. 102(d) as being anticipated by Morihiro (JP 02201946).

Morihiro teaches a resin molded semiconductor device comprising a chip 1 mounted on a die pad portion 2 of a lead frame; wires 3 connecting the terminals to inner lead portions of the lead frame; a sealing resin 8 which seals an outer peripheral region of the chip, said region including a wire region of the upper face of the chip, and a lower region of said die pad portion; and outer lead portions arranged in a bottom face region of said sealing resin, wherein said die pad portion is located higher than the inner lead portions.

Regarding claim 8, see that Morihoro's device has leads that will inherently be exposed from the sealing in order to pin the device to a substrate.

Regarding claim 7, see bottom of chip device wherein exposed surfaces of lead 5 is arranged leveled with the encapsulant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6 and 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morihoro in view of Morihoro in view of Kanji (JP 02280925).

Morihoro discloses the resin molded type device as discussed above. However, the prior art fails to disclose:

- At least one groove portion in a surface of each inner lead portion (**Claims 2 and 9**)
- Said thin wire being disposed on a side of said inner lead portion between said groove portions (**Claim 3**)
- A widened portion formed in each inner lead portion (**Claim 4**)
- A widened portion formed in each of said inner lead portions and at least one groove portion is formed in a surface (**Claim 5**)

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- A widened portion formed in each of said inner lead portions, a plurality of groove portions formed in a surface, and connecting portions are disposed between said groove portions (**Claims 6 and 10**).

Kanji teaches leads 1b with grooves 7, and a wire connected between said grooves.

Morihiro fails to teach at least one groove portion in a surface of each inner lead portion. However, Kanji does. It would be obvious to integrate at least a groove in a surface of each inner lead portion in order to provide the lead with an uneven surface easier to localize in the bonding process (**Claims 2 and 9**).

Morihiro fails to teach said thin wire being disposed on a side of said inner lead portion between said groove portions. However, Kanji does. It would be obvious to dispose wires on a side of said inner lead portion between said groove portions in since leads with an uneven surface makes easier to localize the bonding portion in the bonding process (**Claim 3, 6 and 10**).

Also see that leads have a **wider** portion where grooves do not exist that where they are present as an obvious result of having grooves present (**Claims 4 and 5**).


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Regarding claims 11-15, see bottom of chip device wherein exposed surfaces of lead 5 is arranged leveled with the encapsulant

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Lourdes Cruz
December 14, 2001

Lourdes C. Cruz
Examiner
Art Unit 2815


EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800